

In the claims:

Added text is underlined, and deleted text is struck through or double-bracketed.

1. (Currently amended) A ~~Virtual Device composed of a multitude system including a plurality of stationary and/or portable electronic devices,~~ comprising:

~~a first Open Device with an available inner structure and a network first Personal Area Network interface;~~

~~at least one Primitive Device arranged to communicate with ~~other devices~~ and to act as a pure slave to said other devices;~~

~~at least one Closed Device with a closed inner structure and a network second Personal Area Network interface;~~

~~said first Open Device and said at least one Closed Device devices being connected in a Personal Area Network[,];~~

~~said first Open Device being arranged to discover and register any of said other devices present in said Personal Area Network,~~

~~a Personal Area Network middleware being installed in said first Open Device, and said first Open Device being arranged to act as a Personal Area Network controller, wherein said Personal Area Network middleware is arranged~~

~~to store and maintain a device profile, said device profile including device information on at least identity, type, capabilities and services offered by any Open Devices, Closed Devices or Primitive Devices available for to said Private Personal Area Network,~~

~~said Open Device being arranged to discover and register any devices present in said Personal Area~~

~~Network, said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device,~~

~~said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to store and maintain a user profile, said user profile including user information on at least which Open Devices, Closed Devices or Primitive Devices are members of said Private Personal Area Network, which Open Devices, Closed Devices or Primitive Devices are available for said Private Personal Area Network, redirection information, which Open Devices, Closed Devices or Primitive Devices should be visible on an external network, the distribution of services among Open Devices or Closed Devices present in said Personal Area Network, and the distribution of resources among Open Devices or Closed Devices present in said Personal Area Network,~~

~~said Personal Area Network middleware further including to include a user interface enabling the a user to control the said Personal Area Network middleware, and~~

~~to include an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware.~~

2. (Currently amended) ~~A Virtual Device The system as claimed in claim 1, further comprising a second Open Device connected to said Personal Area Network.~~

3. (Currently amended) A ~~Virtual Device composed of a multitude system including a plurality of stationary and/or portable electronic devices, comprising:~~

~~an Open Device with Open Devices each having an available inner structure and a network first Personal Area Network interface;~~

~~at least one Primitive Device arranged to communicate with other devices and to act as a pure slave to said other devices;~~

~~at least one further Open Device;~~

~~at least one Closed Device with a closed inner structure and a network second Personal Area Network interface;~~

~~said Open Devices and said at least one Closed Device devices being connected in a Personal Area Network, including:~~

~~said Open Devices each being arranged to act as a Personal Area Network controller, to discover and register any devices present in said Personal Area Network, and to invoke services running on other Open Devices;~~

~~the a Personal Area Network middleware being installed on said Open Devices, said Personal Area Network Middleware being and distributed between said Open Devices, said Open Devices being arranged to act as a Personal Area Network controller, wherein said Personal Area Network middleware is and arranged~~

~~to store and maintain a device profile, said device profile including device information on at least identity, type, capabilities and services offered by any Open Devices, Closed Devices or Primitive Devices available for said Private Personal Area Network,~~

~~said open devices being arranged to discover and register any devices present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device,~~

~~said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to store and maintain a user profile, said user profile including user information on at least which Open Devices, Closed Devices or Primitive Devices that are members of said Private Personal Area Network, redirection information, which Open Devices, Closed Devices or Primitive Devices that should be visible on an external network, the distribution of services among Open Devices or Closed Devices present in said Personal Area Network, and the distribution of resources among Open Devices or Closed Devices present in said Personal Area Network,~~

~~said Personal Area Network middleware further including to include a user interface enabling the a user to control the said Personal Area Network middleware, and to include an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware.~~

4. (Currently amended) A Virtual Device ~~The system~~ as claimed in claim 3, wherein at least one of said Open Devices or said Closed Devices is equipped with a an external network interface connected to an said external network.

5. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim 4, further comprising a Personal Area Network server in residing on said external network, connected to said Personal Area Network, and arranged to store a backup copy of information stored in said Personal Area Network, and to synchronize said backup copy with said information.

6. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim 5, wherein said each Open Device or devices is/are arranged to periodically poll the network said Personal Area Network.

7. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim 3, further comprising a Web service platform installed on each Open Device for enabling said each Open Device to invoke Web services running on said other Open Devices.

8. (Currently amended) ~~A Virtual Device composed of a multitude system including a plurality of portable electronic devices, comprising:~~

an Open Device with an available inner structure and a network first Personal Area Network interface;

at least one Primitive Device arranged to communicate with other devices and to act as a pure slave to said other devices;

at least one Closed Device with a closed inner structure, and a network a second Personal Area Network interface, said at least one Closed Device being equipped with a and an external network interface;

~~connected to an external network to which said external network interface is connected; which includes~~

~~a Personal Area Network server residing on said external network,~~

~~said Open Device, said at least one Closed Device and said Personal Area Network server being connected in a Personal Area Network,~~

~~said Open Device being arranged to discover and register any of said other devices present in said Personal Area Network;~~

~~a Personal Area Network middleware, being installed on said Personal Area Network server, said Open and Closed devices and said server forming a Personal Area Network operated by said Personal Area Network middleware, wherein said Personal Area Network middleware is operating said Personal Area Network and arranged~~

~~to store and maintain a device profile, said device profile including device information on at least identity, type, capabilities and services offered by any Open Devices, Closed Devices or Primitive Devices available for said Private Personal Area Network,~~

~~said Open Device being arranged to discover and register any devices present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device,~~

~~said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to store and maintain a user profile, said user profile~~

including user information on at least which Open Devices, Closed Devices or Primitive Devices that are members of said Private Personal Area Network, which Open Devices, Closed Devices or Primitive Devices that are available for said Private Personal Area Network, redirection information, which Open Devices, Closed Devices or Primitive Devices that should be visible on an external network, the distribution of services among Open Devices or Closed Devices present in said Personal Area Network, and the distribution of resources among Open Devices or Closed Devices present in said Personal Area Network,

~~said Personal Area Network middleware further~~
including to include a user interface enabling the a user to control the said Personal Area Network middleware, and
to include an Application Programming Interface to ~~said Personal Area Network middleware~~ allowing applications access to capabilities and functions in said Personal Area Network middleware.

9. (Currently amended) A Virtual Device composed of a multitude system including a plurality of portable electronic devices, comprising:

a at least one Closed Device with a closed inner structure, and a network a Personal Area Network interface, connected to and an external network interface;

at least one Primitive Device arranged to communicate with ~~said Closed Device or devices~~ and to act as a pure slave to said at least one Closed Device or devices;

a server in said external network on which is installed a Personal Area Network middleware, said server being arranged to communicate with said at least one Closed

Device ~~or devices~~ in order to act as a Personal Area Network controller, wherein said Personal Area Network middleware is arranged

to store and maintain a device profile, ~~said device profile~~ including device information on at least identity, type, capabilities and services offered by any Open, Closed Devices or Primitive Devices available for said Private Personal Area Network,

~~said Personal Area Network middleware being arranged to discover and register any devices present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to redirect an output stream from one device to an input port on another device,~~

~~said Personal Area Network middleware being arranged to redirect an application to a specific device present in said Personal Area Network,~~

~~said Personal Area Network middleware being arranged to store and maintain a user profile, ~~said user profile~~ including user information on at least which Open, Closed Devices or Primitive Devices that are members of said Private Personal Area Network, which Open, Closed Devices or Primitive Devices that are available for said Private Personal Area Network, redirection information, which Open, Closed Devices or Primitive Devices that should be visible on an said external network, the distribution of services among Open ~~or~~ Closed Devices present in said Personal Area Network, and the distribution of resources among Open ~~or~~ Closed Devices present in said Personal Area Network,~~

~~said Personal Area Network middleware further including to include a user interface enabling the user to control the said Personal Area Network middleware, and~~

~~to include an Application Programming Interface to said Personal Area Network middleware allowing applications access to capabilities and functions in said Personal Area Network middleware[[],]~~

~~each Open Device being arranged to invoke services running on other Open Devices,~~

~~said server being arranged to store a backup copy of information stored in said Personal Area Network, and synchronize said backup copy with said information.~~

10. (Currently amended) ~~A Virtual Device~~ ~~The system~~ as claimed in claim 9, wherein said Personal Area Network server is arranged to periodically poll ~~the network~~ devices connected to said Personal Area Network.

11. (Currently amended) ~~A Virtual Device~~ ~~The system~~ as claimed in claim 1, characterized in that said Application Programming Interface is implemented as ~~one of the following any of:~~ Java, CORBA, or an XML Web service.

12. (Currently amended) ~~A Virtual Device~~ ~~The system~~ as claimed in claim 1, wherein at least one of said Open Devices or said Closed Devices is equipped with a an external network interface connected to an said external network.

13. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim 12, further comprising a Personal Area Network server ~~in residing on said external network and~~ arranged to store a backup copy of information stored in said Personal Area Network, and to synchronize said backup copy with said information.

14. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim 13, wherein said first Open Device is arranged to periodically poll ~~the network~~ said Personal Area Network.

15. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim ~~± 3~~, characterized in that said Application Programming Interface is implemented as ~~one of the following any of:~~ Java, CORBA, or an XML Web service.

16. (Currently amended) ~~A Virtual Device~~ The system as claimed in claim ~~3 8~~, characterized in that said Application Programming Interface is implemented as ~~one of the following any of:~~ Java, CORBA, or an XML Web service.

17. (New) The system as claimed in claim 9, characterized in that said Application Programming Interface is implemented as any of: Java, CORBA, or an XML Web service.

18. (New) A system, comprising:

at least one first device capable of transmitting a first output stream via a first communication interface;

a second device comprising a second communication interface capable of receiving said first output stream, said second device and at least one third device forming a Personal Area Network;

a Personal Area Network middleware, executed by at least said second device, storing at least a user profile including redirection information for said at least one third device of the Personal Area Network, and arranged to intercept and redirect said first output stream to an input port of a third device based on said redirection information.

19. (New) The system as claimed in claim 18, further comprising a user interface application enabling a user to control said Personal Area Network middleware and manage said redirection information.

20. (New) The system as claimed in claim 18, wherein said second device is on a network external to said first and third devices, and wherein redirection of said first output is performed via a fourth device in communication with the second device over a network interface.

21. (New) The system as claimed in claim 20, wherein said Personal Area Network middleware is distributed among and executed by both said second device and said fourth device.

22. (New) The system as claimed in claim 21, wherein user profile data and settings stored by said Personal Area Network middleware are synchronized between said second device and said fourth device.

23. (New) The system as claimed in claim 21, wherein said Personal Area Network middleware is distributed using XML Web services.

24. (New) The system as claimed in claim 18, further comprising at least one other second device, wherein said Personal Area Network middleware is distributed among said second devices.

25. (New) The system as claimed in claim 24, wherein said Personal Area Network middleware is distributed using XML Web services.

26. (New) The system as claimed in claim 18, wherein said first output stream is generated by a first application, said system further comprising a second application generating a second output stream, said second output stream being redirected by said Personal Area Network middleware to a third device other than that to which said first output stream is redirected.

27. (New) The system as claimed in claim 18, wherein said first device and said third device are selected from communication devices, computing devices, peripheral devices, electronic devices or electronic appliances.

28. (New) The system as claimed in claim 18, wherein at least one of said first devices and said third devices is arranged to communicate with and to act as a pure slave to other devices.

29. (New) The system as claimed in claim 18, wherein said Personal Area Network middleware is additionally arranged to discover and register any of said first, second, and third devices present in said Personal Area Network and to store their presence in a device profile including device information on at least identity, type, capabilities and services offered by any of said first, second, or third devices.

30. (New) The system as claimed in claim 18, wherein said user profile further comprises which of said first, second and third devices are members of said Personal Area Network.

31. (New) The system as claimed in claim 30, wherein said user profile further comprises which of said first, second and third devices are available for said Personal Area Network.

32. (New) The system as claimed in claim 18, wherein said user profile further comprises which of said first, second and third devices should be visible on an external network.

33. (New) The system as claimed in claim 18, wherein said user profile further comprises information regarding distribution of services and resources among said first, second and third devices present in said Personal Area Network.

34. (New) The system as claimed in claim 18, wherein said Personal Area Network middleware is arranged to include an Application Programming Interface enabling application access to capabilities and functions in said Personal Area Network middleware.

35. (New) The system as claimed in claim 34, wherein said Application Programming Interface is implemented as any of: Java, CORBA or an XML Web service.